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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,929

09/11/2006

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EXAMINER

DUONG, DIEU HIEN

ART UNIT

PAPER NUMBER

2821

MAIL DATE

DELIVERY MODE

12/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/564,929	Applicant(s) THUDOR ET AL.	
	Examiner Dieu Hien T. Duong	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>01/17/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Application

1. This Office Action is a response to Applicants' Preliminary Amendment filed on January 17, 2006. In virtue of this communication, claims 1-9 are currently presented in the instant application.

Inventorship

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Priority

3. Acknowledgement is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on January 17, 2006 in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is considered by the examiner.

If applicant is aware of any prior art or any other co-pending application not already of record, he/she is reminded of his/her duty under 37 CFR 1.97 to disclose the same.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "a planar antenna", "a substrate", "a short-circuit plane" and "a line/slot coupling" must be shown or the features canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4)

because:

Reference character "1" has been used to designate both "slot" and "access";

Reference character "2" has been used to designate both "access" and
"substrate";

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The specification is accepted as part of the formal application.

Applicant cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

8. Claims 1, 2-4 and 7-8 are objected to because of the following informalities:

Claim 1:

In line 5, after "where", - -p is a perimeter of the slot,- - should be inserted;

Claims 2-4:

In line 2, "each feed-line" should be changed to - -said each feed-line- -;

Claims 7-8:

In line 2, the phrase "for a slot of rectangular shape" is unclear. It is not clear that the "slot" of claims 7-8 is same as or different with the "slot" of claim 1. As best understood, "for a slot of rectangular shape" should be changed to - - when the shape of said slot is rectangular- -;

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1:

The recitation "a short-circuit plane of at least one feed-line" is unclear. It is not clear what is meant by "a short-circuit plane"?

Regarding claim 2:

The recitation "wherein each feed-line terminates in an open circuit and is coupled to the slot according to a line/slot coupling such that the length of the line after the transition equals $(2K'+1) \lambda m/4$ ", in lines 2-4 is unclear. It is not clear what is meant by "line/slot coupling" and which is the "length of the line after the transition"? Does the recitation "the line" in line 3 of claim 2 refer to the "slot line", the "feed-line" or the "line/slot coupling"?

Regarding claim 3:

The recitation "wherein each feed-line is coupled to the slot according to a line/slot coupling with a microstrip line terminated by a short-circuit located at $(2K'+1) \lambda m/4$ ", in lines 2-4 is unclear. It is not clear what is meant by "a line/slot coupling".

Regarding claim 4:

The recitation "each feed-line is coupled magnetically to the slot according to a tangential line/slot transition" is unclear. It is not clear what is meant by "tangential line/slot transition".

Claims 5-9 are rejected since they are dependent on indefinite claim 1.

Clarification is required.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto et al. (US 5,892,487), hereinafter "Fujimoto".

Regarding claim 1, as best understood, Fujimoto discloses, in Figures 3-4, a planar antenna forming on a substrate (13) comprising a slot (16) of closed shape dimensioned to operate at a given frequency of at least one feed-line (17, 18), said antenna comprising a first feed-line (17) placed in an open circuit zone of the slot (16) and a second feed-line (18) placed at a distance $d = (2n+1) \lambda / 4$ from the first line, wherein n is an integer greater than or equal to zero.

Fujimoto does not disclose the perimeter of the slot being selected such that $P = k \lambda$ wherein k is an integer greater than 1 and λ is the guided wavelength in the slot. However, such difference is not of patentable merits since it would have been obvious matter of design choice to change the perimeter of the slot to produce a particular resonant frequency and such modification such modification would have involved a mere change in the length of the slot of the antenna component. A change in length of the slot is generally recognized as being within the level skill in the art.

Regarding claims 2-3, as best understood, as applied to claim 1, Fujimoto discloses, in Figure 6, wherein each feed-line terminates in an open circuit and is coupled to the slot.

Regarding claim 4, as best understood, Fujimoto discloses, in Figure 3, wherein each feed-line is coupled magnetically to the slot according to a tangential line/slot transition.

Regarding claim 5, as best understood, as applied to claim 1, Fujimoto discloses, in Figure 3, characterized in that the feed-lines are in microstrip technology, coplanar technology or by a coaxial cable.

Regarding claim 6, as applied to claim 1, Fujimoto discloses, in Figure 6, wherein the shape of the slot line is an annular.

Regarding claim 7-8, Fujimoto discloses, in Figure 6, wherein the feed-lines are equidistant from an axis of symmetry of the slot.

Fujimoto does not disclose, the shape of the slot being rectangular. However, such difference is not of patentable merits since it would have been obvious matter of design choice to select a rectangular slot and such modification would have involved a mere change in the shape of the slot of the antenna element. A change in the shape of antenna element is generally recognized as being within the level of ordinary skill in the art.

Regarding claim 9, as applied to claim 1, Fujimoto discloses, in Figure 1, wherein the feed lines being connected to a transmission/reception means (9) enabling a diversity of reception.

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent

and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 1, 4 and 6-8 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 9 and 11 of U.S. Patent No. 7,027,001 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the claims 1, 9 and 11 of the above patent including all limitation of the claims 1-4, and 6-8 of the instant application.

Inquiry

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu Hien T. Duong whose telephone number is 571-272-8980. The examiner can normally be reached on Monday - Friday, from 8:30AM-5:00PM.

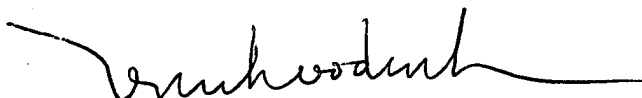
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



DD
Art Unit 2821

TRINH DINH
PRIMARY EXAMINER